

### Practice Problems: Percentage Concentration

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1. Assume that you have a 5.75% m/m solution of LiCl in water. What mass of solution (g) contains 1.60 g of LiCl?
2. Hair dye can contain a solution that is 10.2% v/v hydrogen peroxide in water. What volume of the peroxide would be found in 250.0 mL of the chemical hair treatment?
3. What volume of ethanol (in wine) is necessary for preparing 800 mL of wine of 12% v/v? The legal limit of alcohol could be 72 mL of alcohol. If a person consumed this entire bottle of wine, would this person be considered legally drunk?
4. A boric acid solution is used in ophthalmic drops (for eyes). What mass of boric acid is present in 50.0 mL of a solution that is 2.25% m/v in water?
5. Balsamic vinegar is sold as a solution of 6% v/v acetic acid in water. What quantity of balsamic vinegar contains exactly 20.0 mL of pure acetic acid?
6. How many grams of NaOH would be required to prepare 800 g of a 40% by mass NaOH solution?  
Challenge: How many grams of water are required?

### Challenge Questions:

7. Calculate the concentration of salt in a solution of water in percent if 45 g is dissolved in 1200 mL of water.
8. Calculate the mass of solute in a 10% solution if the mass of the solution is 350 g.
9. Calculate the number of moles of  $\text{H}_2\text{O}_2$  in 450 mL of a 35%  $\text{H}_2\text{O}_2$  solution.